2012 International Conference on Winter Maintenance and Surface Transportation Weather
April 30 – May 3, 2012
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Conference Paper Listing

Application of Collision Prediction Models for Quantifying the Safety Benefit of Winter Road Maintenance (WM-STW12-101), Taimur Usman and Liping Fu, University of Waterloo, Ontario; Luis F. Miranda-Moreno, McGill University, Montreal; Max S. Perchanok, Ontario Ministry of Transportation

Model to Forecast Short- and Long-Term Prediction of Road Surface Temperature in Korea (WM-STW12-102), ChoongHeon Yang, Duk-Geun Yun and Jung Gon Sung, Korea Institute of Construction Technology, Goyang

Potential Impacts of a Multi-Purpose Snow Removal Instrument on Snow Removal (WM-STW12-103), Woo Hoon Jeon, Choong Heon Yang and In Su Kim, Keorea Institute of Construction Technology; Jun-Seok Oh, Western Michigan University

Intelligent Transportation Solutions (ITS) and Support System for Winter Maintenance (SSWM) – for Road Maintenance (WM-STW12-104), Jörn Bogren and Torbjörn Gustavsson, Göteborg University, Sweden

Tomorrow’s Forecast: Informed Drivers (WM-STW12-105), Sheldon Drobot, Michael Chapman, Amanda Anderson and Brice Lambi, National Center for Atmospheric Research, Boulder, Colorado; Paul Pisano and Gabriel Guevara, Federal Highway Administration

Recent Trends in the Changes in Snowfall and Snow Depth in Japan, and Their Impact on Snow Control Measures (WM-STW12-107), Masaru Matsuzaawa, Yusuke Harada, Masayo Ueda and Hiroki Matsushita, Civil Engineering Research Institute for Cold Region, Sapporo; Yasuhiko Ito, Snow Avalanche and Landslide Research Center, Niigata, Japan

Potential of Using Warm Wetted Sand for Skid Control on Walkways and Bike Paths (WM-STW12-108), Anna Niska, Swedish National Road and Transport Research Institute (VTI)

Trafficability of Heavy Vehicles on Inclines (WM-STW12-109), Torgeir Vaa and Ivar Hol, Norwegian Public Roads Administration

Side Friction as a Parameter in Optimizing Winter Road Operations (WM-STW12-110), Torgeir Vaa and Ivar Hol, Norwegian Public Roads Administration

Registration of Road Vehicle Rescue Actions as a Basis for Traffic Safety Measures (WM-STW12-111), Torgeir Vaa and Per Brandli, Norwegian Public Roads Administration

Geospatial Weather Decision Support for Transportation Applications (WM-STW12-112), Jeremy Duensing, Telvent DTN, Minneapolis

Safety Impacts of Winter Weather on Iowa’s Rural Primary Highways (WM-STW12-113A), Zachary Hans, Neal Hawkins, Inya Nlenanya and Steve Lavrenz, Center for Transportation Research & Education, Iowa State University

Operational Blowing Snow Modeling: Benefits for the End User (WM-STW12-114), Leon F. Osborne, Jr., Ben Hershey and John J. Mewes, Meridian Environmental Technology, Inc., Grand Forks, North Dakota

Assessment and Evaluation of MDSS Recommendations (WM-STW12-115), Anthony K. McClellan, Benjamin W. Hershey, Robert D. Hart and John J. Mewes, Meridian Environmental Technology, Inc.

Decision Support Technologies: Beyond Winter Operations (WM-STW12-116), Ben Hershey, Anthony McClellan and John J. Mewes, Meridian Environmental Technology, Inc.

New Methods to Quality Check Road and Weather Observations for Vehicle Data (WM-STW12-117), Daniel Koller, Benjamin W. Hershey, John J. Mewes and Anthony K. McClellan, Meridian Environmental Technology, Inc.

Simulating Winter Maintenance for Performance Measurement (WM-STW12-118), John J. Mewes, Jeffrey Kuntz and Benjamin W. Hershey, Meridian Environmental Technology, Inc.

Multi-State, Multi-Sensor, and Predictive Road Condition Information (WM-STW12-119A), John J. Mewes, Jeff Kuntz and Ben Hershey, Meridian Environmental Technology, Inc.

A Snow-Transport and Mitigation Modelling System for Managing Snow Drifting Along Highways (WM-STW12-120), Patrick Grover, Neil Hellas and Steven Mcardle, 4DM, Inc, Ontario

Implementing Winter Climate Studies for Transportation Projects in Ontario, Canada (WM-STW12-121), Steven Mcardle, Patrick Grover and Neil Hellas, 4DM, Inc, Toronto, Ontario
Measuring and Predicting Soil Temperature and Moisture Content Beneath Nova Scotia’s Highways: One Year of Observations and Forecasts (WM-STW12-122), Benoit Pouliot, Paul Delannoy, Phil Woodhams, and Shawn Allan, AMEC Earth & Environmental, Ottawa; Olga Kidson, Nova Scotia Transportation and Infrastructure Renewal, Halifax

Clarus Multi-State Regional Demonstrations: Summary of Evaluation Results and Lessons Learned (WM-STW12-123), Deepak Gopalakrishna and Chris Cluett, Battelle; Kevin Ballett, Texas Transportation Institute; Paul Pisano, Federal Highway Administration

A National Mobile Environmental Observation Network: Increasing Insight to Road Weather and Surface Conditions (WM-STW12-124), Brian Bell and Paul Heppner, Global Science & Technology, Inc.

CARS-CAP Automated Weather Reporting (WM-STW12-125), Peter Davies, Kristin Virshbo and Dane Unruh, Castle Rock Associates

Subjective and Objective Assessment of Driving Environmental Wind Driving Environment (WM-STW12-126), Naoto Takahashi, Tatsuya Takada, Makoto Kiriishi and Roberto A. Tokunaga, Civil Engineering Research Institute for Cold Region; Shigeru Kamiyama, Hokkaido Regional Development Bureau, Sapporo, Japan

Diagnosing Hazardous Road Surface Conditions Through Probe Vehicle as Mobile Sensing Platform (WM-STW12-127), Jinhwan Jang and Namchul Baik, Korea Institute of Construction Technology, Gyeonggi-Do

Weather and Friction Data Collection for Winter Road Performance Evaluation (WM-STW12-128), Roberto Tokunaga, Makoto Kiriishi, Tetsuya Takada and Naoto Takahashi, Civil Engineering Research Institute for Cold Region; Tatsuya Yamazaki, Hokkaido Regional Development Bureau, Sapporo, Japan

Research Programs for Winter Road Maintenance in the Third Medium-Term Plan of the Public Works Research Institute of Japan (WM-STW12-129), Motoki Asano, Masayoshi Watanabe, Masaru Matsuzawa, Masayuki Kumagai and Yuyi Yanagisawa, Civil Engineering Research Institute for Cold Region, Sapporo, Japan

Measures Against Avalanches in Which the Phenomena of Snow Sliding Through Supporting Surfaces of Snow Bridges Occurs (WM-STW12-130), Hiroki Matsushita, Masaru Matsuzawa, Osamu Sakase and Hiroshi Nakamura, Civil Engineering Research Institute for Cold Region, Sapporo, Japan

Revision of the Highway Snowstorm Countermeasure Manual - Focus on Snowbreak Woods (WM-STW12-131), Manabu Kaneko, Takashi Watanabe and Masaru Matsuzawa, Civil Engineering Research Institute for Cold Region, Sapporo; Yashuiko Ito, Snow Avalanche and Landslide Research Center, Niigata, Japan

A Study on Provision of Winter Road Snowstorm Information to Road Users (WM-STW12-132), Hirotaka Takechil, Masaru Matsuzawa, Toshiro Kawanaka, Hiroshi Nakamura and Manabu Kaneko, Civil Engineering Research Institute for Cold Region, Sapporo, Japan

Use of Ground Penetrating Radar in Frozen Ground Investigations (WM-STW12-133), Inge Hoff, Norwegian University of Sciences and Technology; Anne Lalagüe, SINTEF Road and Railway Engineering, Norway

Applicability of Ground Penetrating Radar in Residual Salt Measurement (WM-STW12-134), Inge Hoff, Norwegian University of Sciences and Technology; Anne Lalagüe, SINTEF Road and Railway Engineering, Norway

Freezing Point Detection Using Infrared Cameras to Within the BIRDS System (WM-STW12-135), Mats Riehm, Royal Institute of Technology, Stockholm; Johan Edblad, MetSense, Gothenburg; Torbjörn Gustavsson and Jörgen Bogren, University of Gothenburg, Sweden

An Evaluation of a Simulation of Sub-Pavement Conditions as They Affect the Implementation and Removal of Seasonal Load Restrictions (WM-STW12-136), Robert D. Hart, Leon F. Osborne, Jr., and John J. Mewes, Meridian Environmental Technology, Inc.; Mark A. Askelson and Jennifer L. Hershey, University of North Dakota

Combined Use of Chemicals for De-icing and Dust-Binding of Paved Roads – Possibilities and Problems (WM-STW12-137), Mats Gustafsson and Göran Blomqvist, Swedish National Road and Transport Research Institute (VTI); Wolfgang Hafner, Magistrat der Landeshauptstadt Klagenfurt am Wörthersee, Austria

The Salt SMART Research Program - Optimizing the Salt Use in Norway (WM-STW12-138), Kai Rune Lysbakken, Aage Sivertsen, Paal Rosland and Joern Ingar Arntsen, Norwegian Public Roads Administration

Sustainable Winter Maintenance and a 22 inch Blizzard: A Case Study (WM-STW12-139), Wilfrid Nixon, University of Iowa; R. Mark DeVries, McHenry County Department of Transportation, Illinois

Residual Salt and Road Surface Wetness – Comparison of Field Techniques (WM-STW12-140), Göran Blomqvist and Mats Gustafsson, Swedish National Road and Transport Research Institute (VTI)


Evaluating the Quality and Value of Road Weather Information (WM-STW12-142), Roemer M. Alfelor and Paul A. Pisano, Federal Highway Administration; Leon F. Osborne, Jr. and Robert D. Hart, Meridian Environmental Technology

Factors for Consideration in Selecting Snow Plow Cutting Edges (WM-STW12-143), Wilfrid A. Nixon, University of Iowa

Alternative Approaches to Measuring Deicer Ice Melting Capacity – Optimization of Test Accuracy and Precision (WM-STW12-145), Scott Koefoed and Jessica Adkins, Cargill Salt; Michelle R. Akin, Western Transportation Institute, Montana State University-Bozeman
Friction and Side Friction – Comparing Measuring Equipment with Passenger Cars (WM-STW12-146), Dagfin Gryteselv, SINTEF Road and Railway Engineering; Terje Giæver and Torgeir Vaa, Norwegian Public Roads Administration, Trondheim

Tire Hardness - A Factor in Traffic Flow Quality of Trucks - Surveying and Field Experiments (WM-STW12-148), Dagfin Gryteselv, SINTEF Road and Railway Engineering; Baard Nonstad and Ivar Hol, Norwegian Public Roads Administration

High Performance Snow Removal Equipment – A Possible Measure for Reducing the use of Salt (WM-STW12-149), Kai Rune Lysbakken, Torgeir Vaa and Anders Svanekil, Norwegian Public Roads Administration; Dagfin Gryteselv, SINTEF Road and Railway Engineering

Winter Storm Responses: Adverse Conditions Communication/Coordination Plan, 2008 (WM-STW12-150A), Paul Kaltner, Wisconsin Department of Transportation

Weather or Not? State Liability and Road Weather Information Systems (RWIS) (WM-STW12-151), Jaime Rall, National Conference of State Legislatures

Using Clarus Data for Disseminating Winter and Other Weather-Related Alerts (WM-STW12-152), Roemer M. Alfelor and Paul A. Pisano, Federal Highway Administration; Doug Galarus, Western Transportation Institute, Montana State University; David Yohanan, Telvent Corp


Measuring Sustainability in Winter Operations (WM-STW12-155), Wilfrid A. Nixon, University of Iowa

Synthesis and Best Practices for Performance Evaluation of Snow and Ice Plows (WM-STW12-156A), Souhail Elhouar and Enad Mahmoud, Bradley University-Peoria, Illinois

Benefits of Implementing AVL Technologies in Wisconsin for Winter Maintenance Operations (WM-STW12-157), Kelvin R. Santiago-Chaparro, Madhav Chitturi, Todd Szymkowski and David Noyce, University of Wisconsin–Madison

Implementing PennDOT’s Winter Services Strategic Plan (WM-STW12-158), Charles C. Goodhart and Bonnie J. Fields, Pennsylvania Department of Transportation; Robert J. Vance and Michael S. Renz, Vance & Renz, LLC; Mary W. Treisbach, Consultant; Barbara T. Harder, B. T. Harder, Inc.

Performance Measures and Prediction Models Applied to Management of Hunan Provincial Highways (WM-STW12-160), Li Ningyuan, Changsha University of Science and Technology, Changsha, Hunan; Wei Wang, Henan Vocational and Technical College of Communications, Henan, China

Winter Performance Measurement Using Traffic Speed Modeling (WM-STW12-161). Tina Greenfield and Matt Haubrich, Iowa Department of Transportation; Mark Kaiser, Zhengyuan Zhu, Daniel Fortin and Jing Li, Iowa State University

Identification of Salt Vulnerable Areas: A Critical Step in Road Salt Management (WM-STW12-163A), Andrew Betts, Nandana Perera and Bahram Gharabaghi, University of Guelph, Canada

The Present and Future of Practical Road Weather Decision Support Research (WM-STW12-164), Michael B. Chapman and Sheldon Drobot, National Center for Atmospheric Research

Quantifying the Mobility Effects of Winter Snow Events and the Benefits of Winter Road Maintenance (WM-STW12-165), Garrett Donaher, Liping Fu and Taimur Usman, University of Waterloo, Ontario; Max S. Perchanok, Ontario Ministry of Transportation

Impact of Climate Change on the Use of Anti- and De-icing Salt in Sweden (WM-STW12-167), Anna K. Arvidsson, Göran Blomqvist and Gudrun Öberg, Swedish National Road and Transport Research Institute (VTI)

Clarus System (WM-STW12-168A), Brenda Boyce, Mixon/Hill, Inc.